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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/422,347
Filing Date: October 21, 1999
Appellant(s): OOMS ET AL.

David J. Cushing
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/21/06 appealing from the Office action mailed 9/09/05.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. The amendment, submitted concurrently with the Appeal Brief of 8/21/06 has been approved and entered.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,502,140	BOIVIE	12-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-7, 9 and 11-20 are rejected under 35 U.S.C. 103 as being unpatentable over Boivie (US 6,502,140).

2. Regarding claims 1 and 7, Boivie teaches a device and method for compressing a list of destination addresses for a multicast message, wherein each destination address in said list represents a different destination host (source node A sends multicast transmission to destination nodes as shown on Fig. 1 and 3:2-10), comprising:

Detecting a common prefix in at least two different final destination addresses from said list of destination addresses (detecting R1R2 as common prefix for final addresses R1R2C and R1R2D in step 1 4:30-46),

Generating a suffix list for final destination addresses that are detected to have a common prefix, wherein said suffix list represents the non identical portions of said destination addresses

detected to have a common prefix (combining last portions of the final destination addresses R1R2C and R1R2D into (C D) in step 2 4:50-55), and

Adding said suffix list to said common prefix to create a compound destination address consisting of compressed final destination addresses (second part of step 2, producing a single element R1R2(CD) 4:55-58, third final destination R1B was dropped for clarity).

Claims 1 and 7 and Boivie specify the same technique of compressing destination addresses to reduce the traffic in a process of multicasting data packets. The only difference between the claims and Boivie lies in the type of addressing used, in the claims the final destination addresses do not include references to the intermediate node, while Boivie does. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the compression technique of Boivie with any addressing scheme because it would have the same benefit, reduction of traffic.

In addition regarding claim 1, Boivie teaches implementing the disclosed above method in a device (node unit 100 on Fig. 2 as a programmed computer apparatus 6:48-62).

3. Regarding claims 2, 3 and 4, Boivie teaches the destination address comprising IP addresses (the network is operated under IP 2:26-34) and other previously compressed compound destination addresses (previously compressed R1R2(CD) address on 4:55 is combined into a single element on 4:56-58).

4. Regarding claims 5 and 6, Boivie teaches the device incorporated into a host or a router of communication network with multicast capabilities (host computers or routers using the device on Fig. 1 and 2:51-61 with multicast capabilities 2:62-67).

5. Regarding claim 19, Boivie teaches a host generating multicast packets (host computer 2:51-67), and a router (routers 2:51-67) both comprising the devices operating as disclosed in claim 1 rejection above.

6. Regarding claim 20, Boivie teaches a router comprising a compression device with generating suffixes and adding them to prefixes as described above in the claim 1 rejection, implemented as a programmed computer apparatus.

7. Regarding claim 9, Boivie teaches a router comprising a routing table memory (inherently part of the system, because all routers comprise a routing table memory) and an addressing device to address the routing table memory via compound address having the same format as said compound destination address (inherently part of the system, because the router addressing device has to address the memory via compound address format, as shown in example 4:30-60, incorporated through the system).

8. Regarding claims 17 and 18, Boivie teaches iteratively compressing/generating suffix, prefix and adding them, for the list of final destinations (performing steps 1 and 2 for three destinations B, C and D on 4:34-60).

9. Regarding claims 11-16, Boivie substantially teaches all the limitations of claims 1 and 7. Boivie does not teach detecting octet, nibble and bit aligned prefixes.

Official notice is taken that detecting octet, nibble and bit aligned prefixes is well known in the art to detect addresses with different lengths.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add detecting octet, nibble or bit aligned prefixes to the system of Boivie to improve the system operation with addresses with different lengths.

(10) Response to Argument

On page 11 of the Brief, Appellant argues that Boivie does not teach compressing the list of addresses.

Examiner respectfully disagrees.

Boivie clearly teaches "folding of the routes, wherein addresses R1R2C and R1R2D are combined/compressed into one address R1R2(CD) in step 2 of the disclosed process on 4:30-55.

In addition, Appellant's arguments directed to the disadvantage of the Boivie method of 5:57-65, are not relevant, because the disadvantage of the method is related to the method implementation with "legacy" routers, which cannot encapsulate multicast 5:40-65.

On page 12 of the Brief, Appellant argues that Boivie does not teach detecting common parts of the addresses in the discussion on column 3 of Boivie.

Examiner respectfully disagrees.

Boivie teaches a traditional method of multicasting on 3:10-8, only to suggest the proposed method of "folding the routes into a multicast tree by combining the common parts of adjacent list elements on 4:30-60. Therefore Applicant's arguments are directed to the Prior Art of multicasting, disclosed by Boivie.

Also, Appellant's arguments directed to length of the header are irrelevant, because appealed claim 1 is directed to compressing a list of addresses and does not directly claim compression of the addresses themselves or the header.

On pages 12-13 of the Brief, Appellant argues that Boivie does not teach using common prefixes for addresses R1R2C and R1R2D, because R1R2 is not part of the address for C or D.

Examiner respectfully disagrees.

Boivie teaches addresses, including R1R2C or R1R2D, as the addresses to comprise the routing information, as one of the known types of addressing (well known as sources addressing, wherein the selected route is included in a header that is appended to the routed message), as the destination node could be reached with a routing method comprising a predefined route (Boivie) or with a method based on distributed routing with unknown route (Current Application). This difference was clearly stated in the Final Rejection of the claims under 35 U.S.C. 103.

Therefore, Boivie teaches to compress final addresses and it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the compression technique of Boivie with Appellant's addressing scheme because it would have the same benefit, reduction of traffic.

On pages 13-14 of the Brief, Appellant argues that Boivie does not teach different addressing scheme, because he uses IP addresses.

Examiner respectfully disagrees.

Numerous routing methods are used for IP packets, as algorithms, based on the destination address and minimum number of hops (distributed routing) or algorithms based on pre-selected route path to guarantee the path Quality of Service (RSVP routing, for example).

Therefore, Boivie teaching of the IP network does not limit the teaching to one type of addressing.

In addition, regarding the arguments on Boivie modification on page 14, the method of compressing addresses of Boivie can be used on the other type of addressing for distributed routing and the elimination of the intermediate nodes in the addresses is appropriate in this type of routing.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Dmitry Levitan DL

Patent Examiner

September 20, 2006

Conferees:

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